

## Studies on Pacific Ferns, Part IV The Pteridophyte Flora of Pitcairn Island

G. BROWNLIE<sup>1</sup>

ALTHOUGH THE FERNS of southeastern Polynesia have been described in several papers, no separate list has previously been provided for Pitcairn Island. The present paper outlines the details of a collection made there by Mr. W. H. Lintott of the Botany Department of the University of Canterbury, and includes mention of other collections where these were available. When the changes which have occurred in the indigenous vegetation are considered, it is remarkable that, as well as finding all the other species noted earlier, one species not previously recorded from Pitcairn is included in the most recent collection.

Of the 20 species listed, 15 are widespread throughout Polynesia, and 2 others are probably local derivatives of similarly widespread species. This large group represents the dominant Malay-Papuan element found in decreasing numbers of species from west to east in the tropical Pacific. Of the remaining 3, 1 species of *Asplenium* and 1 of *Trichomanes* are found in S.E. Polynesia and New Zealand, and are the only ones to which Copeland's (1938) ideas of an Austral group can be applied. The single species of *Cyathea* is related to ferns found in Rapa and the Society Islands. There are only 2 species recognised as endemics, and each of these may in fact be better regarded as varieties. Viewed as a whole, the pteridophyte flora of this region, Pitcairn, Rapa, and the Australs, appears to be merely an extension of that of the Society Islands.

*Abbreviations:* C, Department of Botany, University of Canterbury; W, Dominion Museum, Wellington; S, Department of Agriculture, Suva, Fiji; K, The Herbarium, Royal Botanic Gardens, Kew.

<sup>1</sup> Department of Botany, University of Canterbury, Christchurch, New Zealand. Manuscript received April 25, 1960.

### PSILOACEAE

*Psilotum nudum* (L.) Grisebach

Pendant on trees and shady rocks; not common. Widely distributed throughout Polynesia.

Lintott 167a and 167b (C), Williams 3068 (W), Twyford S.P. 129 (S).

### MARATTIACEAE

*Angiopteris chauiodontia* Copeland

On damp hillsides in dense shade. I doubtfully retain this as a distinct species, and it may be only a local form in which the sterile apices of the pinnules are more toothed than is usual in *A. evecta*.

Lintott 150 (C), Twyford S.P. 130 (S).

### GLEICHENIACEAE

*Dicranopteris linearis* (Burm.) Und.

*Gleichenia linearis* (Burm.) Clark. Brown, B.P. Bishop Mus. Bull. 89, 97, 1931.

Copeland, Occ. Pap. B.P. Bishop Mus. 14(5): 52, 1938.

Forming tangled masses on dry hillsides. Widely distributed in the tropics and subtropics of the Old World with many recognized varieties in S.E. Asia. It is probable that there are also several varieties in the Pacific area, but these have not been worked out.

Lintott 163, 164 (C), Twyford S.P. 135 (S), Williams 3038, 3081 (W), Fosberg 11221 (K), Quayle No. X (K).

### HYMENOPHYLLACEAE

*Trichomanes endlicherianum* Pr.

Damp rocky faces in shady stream bed. This is the only record of a member of this family from Pitcairn, and as it appears to be fairly uncommon, it has presumably been overlooked by previous collectors. The specimens are some-

what smaller than those from the Austral Islands and New Zealand, but they have the characteristic single row of elongated marginal cells. The species is found in New Zealand, the Kermadecs, Samoa, Fiji, Tahiti, the Australs, and Rapa.

Lintott 155 (C).

#### PTERIDACEAE

##### *Adiantum hispidulum* Sw.

In isolated clumps on dry slopes and in rocky crevices. All examples are considerably smaller than those seen from the larger Pacific islands. The species is widely distributed in the tropics and subtropics from Africa to Polynesia and south to New Zealand.

Lintott 152, 152b (C), Twyford S.P. 51 (S), St. John 15031 (K).

#### CYATHEACEAE

##### *Cyathea cumingii* Bak.

Tree fern up to 10 ft. high, occurring in several places on the island. Elsewhere known only from the Australs, but *C. rapensis* and *C. societarum* are very similar, if not identical.

Lintott 165 (C), Williams 3010, 3011 (W), Twyford S.P. 132 (S), Quayle No. 1 (K), Cuming 1393 (K), Matthews No. 7 (K), Fosberg 11241 (K), St. John 14978 (K).

#### DAVALLIACEAE

##### *Davallia solida* (Forst.) Sw.

Common everywhere, creeping on the ground and as an epiphyte on old trees. Four local forms have been recognized in S.E. Polynesia by Brown (1931), but the species is everywhere somewhat variable in degree of division of the fronds and in shape of the indusia. It is distributed from Burma to Pitcairn.

Lintott 162 (C), Williams 3013, 3052 (W), Twyford S.P. 133, 134 (S), Quayle No. X (K), St. John 15048 (K).

##### *Nephrolepis biserrata* (Sw.) Schott

Common throughout the island underneath

*Pandanus*. Christensen (1943) regards the Polynesian-Asiatic forms as probably distinct from genuine African *N. biserrata*, but until a complete revision of the genus has been carried out it is preferable to retain the well-known name. The distribution of the species in its widest sense is pantropic.

Lintott 158 (C), Williams 3074, 3079 (W), Twyford S.P. 59 (S), Quayle No. 1 (K).

##### *Nephrolepis hirsutula* (Forst.) Pr.

Fairly common, particularly around clearings. Very variable in all its characters, often approaching close to *N. biserrata*, although it is usually smaller than that species. Distributed from tropical Asia to Pitcairn.

Lintott 169 (C), Williams 3051, 3078 (W), Twyford S.P. 136 (S).

#### ASPIDIACEAE

##### *Thelypteris uliginosa* (Kze.) Ching

*Dryopteris setigera* (Bl.) Kze. Brown, B.P. Bishop Mus. Bull. 89, 30, 1931.

On cleared banks along shady tracks. I have seen no fertile specimens of this fern from Pitcairn, and it appears to be relatively uncommon. The species is widespread in the tropics and subtropics from Asia through the Pacific to Pitcairn.

Lintott 168 (C), Twyford S.P. 131 (S).

##### *Rumohra aristata* (Forst.) Ching

*Polystichum aristatum* (Forst.) Pr. Brown, B.P. Bishop Mus. Bull. 89, 38, 1931.

Copeland, Occ. Pap. B.P. Bishop Mus. 14(5): 57, 1938.

Forming small patches under trees on hillside ridge of Adamstown. Brown was in error in comparing specimens of this fern from Rapa with New Zealand forms, for, although found in the Kermadecs, it does not occur on the mainland of New Zealand. Distribution is throughout the tropics and subtropics of the Old World.

Lintott 154 (C), Quayle No. X (K), St. John 14969 (K).

*Cyclosorus parasiticus* (L.) Farwell

*Dryopteris parasitica* (L.) Kze. Brown, B.P. Bishop Mus. Bull. 89, 22, 1931.

*Dryopteris dentata* (Forst.) C. Chr. Copeland, Occ. Pap. B.P. Bishop Mus. 14(5): 56, 1938.

Common everywhere in shady positions. The habit of these specimens is almost intermediate between typical *C. parasiticus* and *C. nymphalis*, but since the leaves are not fascicled it is better to place it in the former species. I feel that Brown's recognition of a local variety based chiefly on characters of size is, however, unsound. Widely distributed from tropical Asia through the Pacific.

Lintott 156 (C), Williams 3049, 3076 (W), Twyford S.P. 100 (S).

*Athyrium polyanthes* (Sol. ex Bak.) Copel.

*Diplazium polyanthos* (Sol.) C. Chr. Brown, B.P. Bishop Mus. Bull. 89, 55, 1931.

*Athyrium pitcairnense* Copel., Occ. Pap. B.P. Bishop Mus. 14(5): 60, 1938.

*Diplazium harpeodes* Moore. C. Chr., B.P. Bishop Mus. Bull. 177, 76, 1943.

Not common; found in isolated clumps in shady valleys. Much of the confusion concerning the nomenclature of this species was cleared up by Christensen (1943), but I prefer to follow Copeland in uniting *Diplazium* and *Athyrium*. Copeland's local species falls within the range of the species as outlined by Christensen. Distribution is throughout the Pacific islands from Fiji to Pitcairn.

Lintott 166 (C), Cuming 1389 (K), Matthews unnumbered (K).

#### BLECHNACEAE

*Doodia media* R. Br.

Fairly common on open ground and underneath *Pandanus*. Distributed from Australia and New Zealand to Pitcairn, but absent from Samoa and Tahiti.

Lintott 159a and 159b (C), Williams 3044 (W), Twyford S.P. 133, 134 (S), St. John 14976 (K).

#### ASPLENIACEAE

*Asplenium nidus* L.

Common in one or two valleys and cultivated in local gardens. Widely spread throughout the tropics of the Old World.

Lintott 153 (C).

*Asplenium obtusatum* Forst.

On rocks on the south coast, and in small caves. Always within or close to the spray zone. The specimens are similar to those found on Rapa, the Australs, and other Pacific islands, but are somewhat smaller than the typical state represented in New Zealand. Elsewhere the species is found in Juan Fernandez and southern Chile, with closely related, if not identical, species on Tristan da Cunha and Tasmania.

Lintott 170 (C), Williams 3083 (W), Twyford S.P. 71, 73 (S), Fosberg 11343 (K).

*Loxoscaphe gibberosum* (Forst.) Moore

*Loxoscaphe gibberosum* var. *pitcairnense* Brown, B.P. Bishop Mus. Bull. 89, 67, 1931.

Common everywhere in deep shade. This species shows so much variation in the degree to which the leaf segments extend beyond the sorus that I feel that Brown's varieties are difficult to maintain. It is found in the Pacific region from Fiji to Pitcairn, but is absent from Samoa.

Lintott 157 (C), Williams 3012, 3053 (W), Twyford S.P. 43 (S), Matthews unnumbered (K), Cuming 1373 (K), Fosberg 11297 (K).

#### POLYPODIACEAE

*Pyrrosia angustata* (Sw.) Ching

*Cyclophorus angustatus* (Sw.) Desv. Brown, B. P. Bishop Mus. Bull. 89, 93, 1931.

Common on rocks in inland situations, and as an epiphyte on large trees. The species is

widely distributed in tropical areas from Malaya to Polynesia.

Lintott 161a, 161b (C), Williams 2997, 3075, 3082 (W), Twyford S.P. 153 (S), Matthews unnumbered (K), Cuming 1394 (K).

*Phymatodes pitcairnense* (Copel.) Brownlie, comb. nov.

*Polypodium phymatodes* L. Brown, B.P. Bishop Mus. Bull. 89, 87, 1931 (in part).

*Microsorium pitcairnense* Copel. Occ. Pap. B.P. Bishop Mus. 14(5): 74, 1938.

Common, creeping on banks along paths. This is a close relative of *P. nigrescens*, but without the distinct veins of that species. Unlike Copeland, I do not find that the sori of any of the specimens are relatively marginal, so that these may not be the same as his species. However, until a full revision of the Pacific members of this genus is undertaken, I feel that it is unwise to introduce further new names for minor differences.

Lintott 160 (C), Williams 3067, 3077, 3084 (W), Twyford S.P. 36, 65 (S), Matthews No. 12 (K).

## VITTARIACEAE

*Vittaria elongata* Sw.

Local, in one area growing on moist rocks. The limitations of this species are somewhat uncertain in the Pacific area, and the Pitcairn example is doubtfully assigned to it. It may in fact be closer to *V. rigida* var. *samoensis* described by Christensen (1943). In the widest sense the species extends from tropical Asia to Polynesia.

Lintott 151 (C), Fosberg 11309 (K).

In addition to the above-listed species there are two sheets at Kew (Cuming 1388) identified as *Polypodium sandwicense*. The specimens belong to the genus *Ctenitis* and approach close to *Dryopteris samoensis* (C. Chr. 1943), but the fact that it has not been found by any subsequent collector indicates that it is probably extinct on Pitcairn or has been wrongly accredited to that island.

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